around the world. Wherever one turns, the number of states which are hard-pressed to satisfy the food requirements of their growing populations has increased dramatically in recent years.

Inconclusive recommendations, ill-prepared proposals, and short-term solutions for curbing worldwide hunger severely tax the capability of food-exporting nations to arrest the "food deficit spiral." A coherent international food policy will require the best efforts of concerned citizens everywhere. For the steady pace of transition is slowly creating an era of global food dependency on a handful of grain-exporting nations—nations which have little control over adverse weather and ultimate harvesting conditions.

This summer's drought in the Nation's Midwest Corn Belt provides an example of the shock wave which can be sent through the international community when crop forecasts in the United States fall below earlier encouraging predictions. The untimely loss of significant amounts of grain will probably result in higher prices and possible shortages here in the United States and a limiting of grain exports to nations which have come to rely on our country to help overcome food shortages.

What is taking place in many countries today foreshadows greater food-related dangers which are inevitable in the years ahead. As we experience a deterioration in the natural balance between man and food sources, it will be necessary to focus greater attention on possible remedies to the danger which food shortages entails so that we may overcome this challenge which threatens the welfare of millions of people. If we are to arrest this epidemic of hunger, the allegiance of the scientific community will be of paramount importance.

Mr. President, the New York Times recently contained an informative article on the role which computer technology can play in determinging the scope and nature of international food problems. The application of computer systems analysis offers exciting means which can be used to explore new avenues of food production. Other technological and scientific advances in the field of food research are a hopeful sign in this unexplored area requiring our constant attention. I ask unanimous consent that the New York Times article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[New York Times, Aug. 10, 1974]

COMPUTER "MODEL" OF WORLD SOUGHT TO COPE WITH FOOD SHORTAGE

(By Walter Sullivan)

Few, if any, problems confronting modern man are more complex than that of assuring an adequate food supply to the peoples of the world in the decades to come.

With near-famine conditions in some parts of the world pushing the problems to the forefront, specialists in the analysis of interacting global issues have begun to apply their expertise and their computers in search of possible solutions.

Success, they emphasize, will depend on identifying those key factors that will control the outcome and, not unexpectedly, they have found that curbing population growth is by far the most vital element.

One projection, in fact, suggests that, if this is not done soon and with special vigor where food supplies are already short, mass starvation by the end of this century is inevitable.

This has emerged from an international effort at computer analysis of all factors believed to bear on food production and population growth over the next half century. The analysis indicates that, unless births in South Asia are brought down to the death rate level within a few decades, half a billion children will die between 1980 and 2025.

TRENDS ARE PROJECTED

The analytical method consists of developing a computer "model" that can project trends by simulating the interactions of all factors believed to determine the direction of such trends.

Those persons responsible for the model that projects mass starvation, unless population is drastically curbed, emphasize that their motive is to identify measures most likely to avoid such a catastrophe, rather than to make "doomsday" predictions.

They are mindful that in the past such projections have been criticized on a variety of grounds—notably that the models did not take into account the "common sense" reactions of humanity to situations that obviously call for changes.

Other long-term projections indicate that total world food production will remain adequate, at least for a decade or two, assuming that the problem of getting food from surplus-producing countries, like the United States, to hungry lands can be solved. On this score, however, there is not much optimism.

It is expected that the countries most in need of food to avert famine will be the least able to pay for it. Some projections set the needs so high that they could be met only if the industrialized countries slaughter much of their livestock to release feed grain for human consumption, assume a considerably greater tax burden and voluntarily lower their living standards.

"EVER-NORMAL" GRANERIES

One proposal for averting famine is setting aside bumper crops to cover the needs of lean years. Such a proposal for "ever-normal" granaries to be discussed at the United Nations World Food Conference in Rome this November.

It is likely, however, that such granaries would be in surplus-producing countries, leaving unresolved the question of who would pay for the relief shipments.

Some projections envision such widespread famine that a form of "national triage" will be necessary. Triage is a term of French origin (rhyming with camouflage) that refers to a procedure for sorting battle casualties.

Normally, the purpose of triage is to minimize deaths by focusing medical attention on those who can only be saved by immediate attention. It denies such attention to those fated to die, regardless of efforts to save them.

"National triage" would direct limited available relief resources to those countries best able to use them effectively.

The possible need for such measures was predicted as early as 1967 by William and Paul Paddock in their book (widely discounted at the time) entitled, "Famine-1975!" One of the Paddock brothers is an Iowa agronomist and the other a retired Foreign Service Officer.

National triage is treated at length in a study nearing completion at the Massachusetts Institute of Technology. It deals with "The Ethics of Humanitarian Food Relief" and is being drafted by Dale Runge of the System Dynamics Group led by Prof. Jay W. Forrester.

Its conclusion, in essence, is that food relief—if it promotes further population growth in the relieved area and denies food to those elsewhere committed to population control—can be "unethical."

As the world food situation has approached a crisis state, there has been a proliferation of efforts to look at it from a "systems" point of view—that is, to look at it in terms of all the interacting factors. It is argued by some experts that so many factors interact to determine the food supply in any one region that only a computer "model" of those factors can make even remotely reliable projections.

Thus, in a telephone interview last week, Dr. Howard Raiffa, head of the International Institute of Applied Systems Analysis near Vienna, said that, if abundant energy were available, there would be no major food problems.

Energy can be used to produce fertilizer. It drives tractors, harvesters and other farm equipment. It turns the pumps used for irrigation in many hungry lands—notably South Asia. It moves food from surplus to needy regions. And it can be used to desalinate water and make the deserts bloom.

But the world's energy supply is limited by a complex of factors including fossil fuel reserves, economic and environmental considerations, and constraints on the development of nuclear power or more exotic energy sources.

As growing world population has placed an ever heavier burden on food-production has become increasingly energy dependent. The outlook for future food supplies has therefore become inextricably entwined with the energy picture, which itself is a classic "systems" problem.

The International Institute of Applied Systems Analysis, which set itself up last year in a palace outside Vienna was founded on joint American-Soviet initiative. Its assignment is to apply the techniques of operations research—originally developed for strategic and big-business decision-making—to such problems as the world's energy supply.

Before taking over as its director, Dr. Raiffa was professor of managerial economics at Harvard University.

MANAGEABLE ISSUES

The institute decided, initially, to avoid taking on problems that involved the whole "world system," concentrating instead on what seemed more manageable issues, such as water resources and energy. The problem of food supply, linked as it is to delicate problems of population control and economics, seemed too touchy for an institute with equal representation from the Soviet bloc and the West.

But in recent months the increasing severity of the food crisis has dissolved such inhibitions. This fall a meeting will be held at the institute to assess what can be done in its 1975 program bearing on the food situation. Furthermore the institute recently devoted one week to assessing the world modeling effort that has led to some of the most alarming predictions.

The world effort, known as the Mesarovic-Pestel Model, was devised by Mihajlo Mesarovic, director of the Systems Research Center at Case Western Reserve University in Cleveland, and Eduard Pestel, director of the Institute of Mechanics at the Technical University of Hanover in West Germany. Maurice Guernier, French specialist in problems of tropical agronomy, collaborated.

THE CLUB OF ROME

They present a summary of their findings, with particular relevance to South Asia, in the July-August issue of the UNESCO Courier, journal of the United Nations Educational, Scientific and Cultural Organization. Their efforts have been carried out under the auspices of the Club of Rome, an international organization of scientists, indus-

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trialists and economists formed in Rome in 1968.

The "club" seeks to apply modern techniques of business management and systems analysis to the more threatening global problems. It promoted the study, carried out at M.I.T. by Dennis L. Meadows of Dr. Forrester's group, that resulted in the 1972 report entitled "The Limits to Growth."

The latter was criticized in some quarters as a simplistic analysis of world trends, based on generalizations with little meaning for the real world.

According to Dr. Meadows, now at Dartmouth College, a detailed explanation of the computer model that led to the report will be published under the title "Dynamics of Growth in a Finite World."

BID TO MEET CRITICISM

The Mesarovic-Pestel Model is an attempt to meet some of the criticisms leveled at the Limits to Growth study. The data relating to food, fertilizer, energy, population and other factors on which it is based are stored in computers in Cleveland, Hannover and Grenoble in France. These can be interrogated by telephone from anywhere in the world.

Two years of work by a large team of specialists went into the study, according to the Courier account. Financial support was provided by the Volkswagen Foundation, which has long aided Club of Rome efforts.

Because issues affecting the "world problem complex" tend to be regional, the analysis has been done in terms of 10 large regions. In each of them, 87 age groups are considered. The local diet is defined in terms of 26 varieties of food, and the model also takes into account effects on the population of protein deficiencies arising from various shortages.

The model makes it possible to test the effects of various attempts to avert mass starvation. One such "scenario" envisions a population policy in South Asia that 50 years after its initiation in 1975, would reduce the birth rate to match the death rate.

NEED FOR GRAIN IMPORTS

Because older people would survive while the younger ones were reproducing, population would continue to grow for several more decades. The only way to feed the resulting population of South Asia, according to the analysis, would be to import more grain than the most optimistic predictions for the entire production of all northern countries.

Since this is unlikely, according to the report, "the catastrophe would start sometime in the early nineteen-eighties and would reach its peak around the year 2000, when deaths related to food deficit would more than double.

After that, the report says, the population would be so cut back that deaths from starvation would begin to decline. However, the cumulative total, by 2025, would come to some 50 million. The report continues:

"Starvation would not be limited to isolated small areas from which people could escape, but would extend its stranglehold over vast regions inhabited by hundreds of millions. The population would be trapped and their would be no fertile areas to go to as the recent events in semi-arid Africa have so tragically shown.

"There is no historical precedent for this kind of slow, inexorable destruction of the population of entire regions which at their peak were inhabited by several billion people."

In a more optimistic scenario, by the same group, a reduction of births to a one-for-one level is envisioned in 25 to 30 years, rather than in 50. The excess population would then be considerably less, and wide starvation might be averted through reasonable imports.

IMPORTS AND INVESTMENTS

However, for South Asia to be capable of such imports, the region must develop export industries. To that end, Dr. Mesarovic said in a recent interview, the industrialized nations, between now and 2020, will have to make capital investments in the area totaling about $300-billion.

It is significant that South Asia was chosen for this prognosis, rather than Africa, where population density is not so severe and where some residents suspect demands from the north for population control are racially inspired. The same issue of the UNESCO Courier carries an article entitled "False Prophets of Doom," attacking the "numbers game" carried out by men and machines in more advanced countries.

Its author is Mazza Bekele, an Ethiopian educator, who points out that whereas Africa, in 1650, was home for 20 per cent of the world population, today it accounts for 9 or 10 per cent occupying a little more than 20 per cent of the world's land.

Africans, he writes, must achieve their "true potential" before putting severe brakes on population growth. Indeed it is widely believed that no form of voluntary control can be achieved until a society has become sufficiently stable and affluent to offer security to its citizens in old age. Until that comes, producing capable offspring is the only hope of such people for security.

THE LAND PROBLEM

One problem, however, as noted by the Paddocks, is that the United States and Canada account for 22.7 per cent of all cultivated land in the world. Yet, for example, South America, with a comparable population, has only 6.5 per cent. Other analysts point out that, while more South American land could be brought under the plow, earlier hopes for cultivation of the Amazon Basin no longer seem very promising in that much of the land is unsuitable for cultivation.

There are a variety of dissenters from the school that believes in elaborate computer modeling and analysis of world problems. There is the "garbage in—garbage out" school that believes most of the data put into the analysis are so unreliable that the results have little meaning.

Some would prefer a much simpler computer analysis, using only what seem determining factors. Others avoid computers entirely, relying on intuition (based on long experience) or blackboard calculations.

Thus, five years ago the United States Department of Agriculture developed a relatively simple computer program to predict American harvests as well as demands by the less-developed countries for American grain.

Its long-term predictions were thrown off by such unforeseen developments as the huge Soviet and Chinese grain purchases of recent years, fertilizer shortages resulting from fuel limitations, and droughts like that which has struck Africa.

AMERICAN CROP LAND

According to Dr. Quentin M. West, director of the Agriculture Department's Economic Research Service, 25 million acres of unused American crop land were put back into production in 1973 and by 1985 27 million more acres should have been added to this figure. As a result, in the next 15 years corn crops could grow 25 per cent and soybean yields, 20 per cent.

"Our projections," he told a meeting last April, "suggest that the United States could meet nearly all the world's increased import demand for coarse grains," through 1985. However, he said, poorer nations may continue to depend on food donations that will not always be forthcoming.

"In this connection, we see no easy solution to the agonizing problem of localized famine in this otherwise increasingly prosperous world."

Lester R. Brown of the Overseas Development Council, who has long specialized in such prognoses, makes far less optimistic predictions. In a book entitled "By Bread Alone," to be published by Preager this fall, he and his colleague Erik P. Eckholm predict that starvation may strike "millions, perhaps tens of millions."

REORDERING PRIORITIES

A fundamental change in the world situation, they say, calls for a reordering of American priorities. With countries like the Soviet Union periodically dependent on the efficiency of American farmers, as well as on imports of American technology, they write, such nations are unlikely to attack the United States.

"It is becoming more and more difficult," they say, "to justify the current scale of U.S. global military expenditures." Profligate consumption of energy by the industrialized countries, they add, "may be a greater threat to future global security than many commonly recognized dangers."

Their study was done, essentially, without recourse to computer. Next door to the Washington headquarters of their Overseas Development Council the Brookings Institution has also begun studies of world food prospects for the remainder of this century. A computer model with limited inputs is being used.

Early results of these studies have led to no predictions of severe global food shortages before the year 2000, although local crises may occur like that associated with the drought and southward march of the Sahara.

It is in the year 2000, on the other hand, that according to the Mesarovic-Pestel Model, population loss by famine would hit its peak in South Asia if population growth is not checked relatively soon.

Among other efforts to project future food needs is a computer program of the Food and Agricultural Organization of the United Nations in Rome. It was initiated in the nineteen-sixties as an "indicative World Plan," directed primarily at crop yields and movements of foodstuffs between nations.

According to specialists here its published findings have run into difficulties when they clashed with national findings that sought to paper over unfavorable statistics. A more sophisticated model is said to be in preparation for the Rome meeting.

Among programs just getting under way in this country are one within the Federal science advisory apparatus under Dr. H. Guyford Stever, head of the National Science Foundation, and another under Congressional Office of Technology Assessment, headed by Emilio Q. Daddario.

THE U.S. ARMS SALES PROGRAM

Mr. NELSON. Mr. President, on June 6, 1974, when amendment No. 1399 to the Foreign Assistance Act was introduced, I pointed out to the Senate that in 1973—the most recent figures available at the time—the United States sold $3.5 billion worth of military goods and services. That figures represented a quadrupling of the fiscal year 1970 total of $926 million.

At the time, fiscal year 1974 sales were estimated to be in the neighborhood of $4.6 billion. Since that statement was delivered, however, two very fine articles have appeared updating the extent and impact of the U.S. foreign military sales program.

Leslie Gelb reported in the July 10 issue of the New York Times that in fact the United States sold some $8.5 billion in arms in fiscal year 1974—an increase of 100 percent over previous fiscal year. This is much more than any of the experts in or out of the Government had expected.

In the Washington Post outlook section of August 1, Andrew Hamilton, a former National Security Council assistant to Henry Kissinger, discussed five major aspects of the burgeoning arms sales program of the United States:

(1) Much of the new wealth of developing nations is paying for non-productive military equipment at inflated prices at a time when more than a billion people face starvation because of inadequate food supply and distribution.

(2) The sales have created new regional arms races, thus boosting demand for more arms and contributing to the risks of war—and of great power confrontation—in unstable areas like the Persian Gulf.

(3) For the first time, the United States is selling its most advanced, most expensive, and most highly classified conventional weaponry and electronics technology.

(4) The danger exists that the buyers, to pay for U.S. and other modern weapons, will be tempted to further increase raw material prices, which in the long run could wipe out any advantage from arms sales and intensify worldwide inflation.

(5) Despite the diplomatic and economic risks involved, the key decisions behind the new rise in U.S. arms exports were made by President Nixon without consulting or even informing Congress.

Former Defense Secretary Laird in a recent interview in Forbes magazine said:

To me the most important agreement that can be worked out in the next four or five years is to involve the Soviet Union, the United States, and all other arms-producing countries to limit the sale and delivery of conventional military equipment into the Middle East, Southeast Asia, Latin America, and Africa.

My amendment is an effort to advance the United States in this direction. The Senate will soon be considering this proposal, which would submit all sales of $25 million or more to a congressional veto. The amendment passed the Senate last year, but was removed in conference along with most of the other Senate provisions.

The Gelb and Hamilton articles are an urgent commentary on the need for favorable consideration of this legislation.

Mr. President, I ask unanimous consent to have both articles printed in the RECORD.

There being no objection, the articles were ordered to be printed in the RECORD, as follows:

[From the New York Time, July 10, 1974]

U.S. ARMS SALES DOUBLED IN 1973-74; REACH $8.5 BILLION—MIDEAST'S SHARE IS $7 BILLION—CONGRESS LACKS VOICE ON MAJORITY OF DEALS

(By Leslie Gelb)

WASHINGTON, July 9.—The United States sold some $8.5-billion in arms for the fiscal years that ended last month, almost double the arms sales for the previous year and almost $2-billion more than all the arms sold or given away by all nations in 1971, according to official Pentagon estimates.

The bulk of American arms sales, some $7-billion went to the Middle East and the Persian Gulf area. This total does not include the $1.5-billion in arms provided free of charge to Israel plus several million dollars in arms grants to Jordan and Lebanon.

While the United States remains the world's leading arms supplier, other nations are also selling more.

SOVIET SOLD $2 BILLION

Pentagon estimates for arms sales in 1973 show the Soviet Union with over $2-billion, its East European allies with over $500-million and American allies with over $2-billion. These figures are all expected to be higher for 1974, but official estimates are not yet available.

Soviet arms sales—Moscow does not provide free arms—went mainly to nations in the Middle East such as Egypt, Syria and Iraq.

Arms control experts in the Government estimate that worldwide arms sales in the nineteen-seventies thus far have about equaled total arms sales for all of the sixties, even discounting for inflation.

The goal of the American program, according to Government sources, has been to pile up ballance-of-payment dollars at least as much as to meet defense and diplomatic requirements.

WITHOUT POLICY REVIEW

The increase in American arms sales, Pentagon and State Department officials said, has taken place without a policy review of the program and with decisions on specific contracts made on an ad hoc basis.

By law, Congress has authority only over arms sales covered by Defense Department sales credits and credit guarantees, about 15 per cent of the total. Congress has no voice and little knowledge of 85 per cent of the effort involving Pentagon-sponsored cash sales and commercial sales.

American sales included over $4-billion for Iran, over $1-billion for Israel and around $700-million for Saudi Arabia. Sales to the area included modern aircraft, the F-4, F-5 and F-14, plus helicopters and various types of missiles.

The F-14 is a long-range, high-performance aircraft firing the most modern missiles and is just now coming into use by American forces. The cost of one F-14 to the United States is about $20-million. Its cost to other nations is somewhat higher.

In addition to the large sales to Iran, Israel and Saudi Arabia, there were about $100-million to Kuwait, several million dollars to the United Arab Emirates, Lebanon and Jordan as well as Pentagon-sponsored cash sales and commercial sales.

EXIMBANK LOAN TO IRAN

In a recent report to Congress, the Export-Import Bank reported that the Pentagon had arranged for the bank to provide a direct long-term low-interest credit to Iran of $200-million in 1974 "for exports of defense articles and services." Iran has earned billions of extra American dollars since the rise in oil prices.

Secretary of Defense James R. Schlesinger recently described the sales program in the Middle East as an attempt to "strengthen deterrence and promote peaceful negotiations by helping our friends and allies to maintain adequate defense forces of their own."

He added the need to match Soviet arms sales and to maintain "continuing access" to oil.

Other officials speak of the program in the Middle East more in terms of maintaining the American arms industry and labor market and earning balance-of-payments dollars against the new high deficits created by the current price of oil.

Several officials cite a directive by President Nixon, dated Dec. 20, 1973, to establish an interdepartmental committee on export expansion, as giving full approval to an open-ended arms sales effort.

OTHER POTENTIAL SELLERS

All the officials interviewed said that if the United States was not willing to sell arms, other nations should. Some said there had been an influx of European sellers into the Latin-American arms market while Washington restrained its sales.

Many officials noted an ambivalent Congressional attitude toward the sales program. For years Congress has urged an end of free arms grants and wider sales programs. Now that this is being done, Congressional committees have begun attacking the sales.

In last year's report, the Senate Foreign Operations Subcommittee stated: "We must visibly deny ourselves the short-range advantage of military equipment sales as a step toward de-escalating the buildup of military facilities throughout the world."

While there has been a sharp rise of American arms sales to the Middle East, sales to other parts of the world have remained relatively constant. The 1974 totals were: East Asia and the Pacific, $320-million, Western Europe $655-million; Africa $35-million; Latin America $220-million. These do not include commercial sales.

PROJECTIONS FOR 1974-75

Projected sales for the current fiscal year, according to Pentagon estimates, will be $650-million in Pentagon credit sales and guarantees of private sales, $3.3-billion in Pentagon-sponsored cash sales, and about $615-million in private commercial sales, for a total of nearly $5-billion.

The American arms are sold by thousands of civilian and military attachés and advisers. They tell prospective customers what is available and find out what the customers want. At the center of this network is the Defense Security Assistance Agency in the Pentagon, now headed by Vice Adm. Ray Peet.

Salesmen from this agency coordinate all activities, arrange for various kinds of financing or cash sales, and close the contracts.

At the State Department, the Office of Munitions Control is in charge of licensing arms exports for commercial sales and for Pentagon credit sales, but not for most sales under the cash program.

Policy-level officials from the Treasury and Commerce departments are involved in certain phases of the arrangements as are policy-level officials in the Pentagon and State Department.

[From the Washington Post, Aug. 11, 1974]

UNCLE SAM, ARMS DEALER

(By Andrew Hamilton)

The Merchant of Death, that international arms salesman, was a sinister figure in the public mythology of the last generation. His rattlesnake eye glinting, a dry rattle in his voice, he plotted to set nation against nation for the sake of profits and a certain perverse delight in destruction.

Hew as a melodramatic villain, a figment of between-the-wars romance, the old-fashioned European armaments king filtered through Eric Ambler and Graham Greene, but his place in the world was long ago usurped by anonymous bureaucrats. From whatever imaginary place he watches the world, his imaginary eye must be glinting again with cold pleasure, for his successors are making up in business volume what they lack in style.

The world arms trade is flourishing as never before, up 50 per cent since 1970. Vietnam and the Arab-Israeli wars account for only a part of this spurt. Of equal or greater significance is the fact that once poor nations of Asia, the Middle East and Latin America have become avid consumers of

arms. And industrial nations, both Western and Communist, are racing each other for sales and the influence they are supposed to bring.

Conflicts are also flourishing, with more than a dozen wars, near-wars, border clashes and shattered truces in the last four years alone, not to mention numerous internal upheavals in which arms played a dominant role. These wars and revolutions not infrequently lead to new orders for military equipment. The United States sold or gave more than $2 billion in arms to Israel following last October's war, while the Soviet Union generously resupplied Egypt and Syria.

Governments which supply arms sometimes argue that there is a beneficial, even an altruistic side to the arms trade. Suppliers, they say, gain influence with recipients and thereby can promote the peaceful resolution of conflicts. In the grandiose words of the most recent report to Congress by the U.S. Defense Security Assistance Agency, "Security assistance is an instrument of national policy which, if put to full use, can effectively expedite the transition from the Cold War confrontation of the past to the generation of peace established by the United States as its goal for the future." Arms transfers, according to this statement, promote "cooperation and partnership" with recipients and are "conducive to restraint."

On July 15, spurred by a military government in Greece critically dependent on American military aid and political support, officers of the Greek Cypriot national guard deposed the president of Cyprus, Archbishop Makarios, and precipitated a continuing crisis. On July 20, Turkish troops in American uniforms and carrying American weapons invaded Cyprus from American-made aircraft, and helicopters and ships carrying American-made trucks and tanks. They were supported by a navy and air force equipped and armed by the United States.

When, next day, Greece began marshaling its American-equipped army aboard American-built landing craft for a counter-invasion, there was imminent danger of war between two nations whose military establishments were largely made in the U.S.A. While Washington did at last persuade the Greeks not to attack, it had failed either to restrain either the coup against Makarios or the Turkish invasion.

Conflicts between nations with the same suppliers are becoming common. Indian and Pakistan fought each other with American equipment in 1971. In the Middle East, Israel, armed with American, British and French weapons, faces Arab nations armed with American, British and French weapons. The grip which the suppliers have on these clients is a tenuous one. And the more source of supply a nation can draw upon, the less dependent it becomes on any one supplier, and the less subject it is to restraint.

LOTS OF COMPETITION

A new world arms market—a buyer's market—is taking shape. It grows out of the mixture of new wealth and old regional rivalries, and is fed by competition among more than a half-dozen suppliers of modern military equipment. These suppliers include the United States, the Soviet Union, England, France, West Germany, Poland, Czechoslovakia and Sweden.

This new market for arms is dominated by the United States, long the General Motors of the arms trade. In the past four years, foreign orders for U.S. military goods have approached $20 billion (not counting another $8 billion in giveaways, mostly to Israel and Vietnam). This adds up to more than the United States sold in the previous two decades, from 1950 to 1970. Orders for U.S. weapons in the last 12 months alone exceeded $8 billion.

Several striking aspects of these developments demand far closer scrutiny than they have received.

First, cash sales make up a high percentage of the new weapons trade. The U.S. share alone has been more than $15 billion since 1971. Much of the new wealth of developing nations is paying for non-productive military equipment at inflated prices at a time when more than a billion people face starvation because of inadequate food supply and distribution. The funds invested in weapons, if shifted to agriculture, would help alleviate the world food shortage.

Second, the sales have created new regional arms races, thus boosting demand for more arms and contributing to the risks of war—and of great power confrontation—in unstable areas like the Persian Gulf.

Third, the character of the sales has changed. No longer is the world arms trade limited to second-hand, obsolescent weapons. For the first time, the United States is selling its most advanced, most expensive and most highly classified conventional weaponry and electronics technology. Iran, the major customer, will get more weapons simultaneous with their delivery to U.S. forces, and has entered into co-production arrangements with certain U.S. arms manufacturers.

The United States is exporting weapons which could be used to deliver nuclear weapons over distances of several hundred miles, to nations, such as Israel and Iran, which are known to be capable of producing nuclear weapons in the next few years.

Fourth, the huge jump in U.S. arms exports affects the domestic economy and the Pentagon's own procurement programs. Besides improving the nation's balance of payments, the foreign orders now provide thousands of jobs in U.S. industry. In the past year they were roughly equivalent to a 40 per cent increase in the Pentagon's weapons budgets. It is clear that such an increase in orders from American industry must affect the number of weapons the Pentagon buys, the rate at which it procures them, and the price it pays.

There are important economic risks in this situation. Take, for example, the balance-of-payments question. In the short term, large foreign orders for weapons will improve the nation's trade balance. But the danger exists that the buyers, to pay for U.S. and other modern weapons, will be tempted to further increase raw material prices, which in the long run could wipe out any advantage from arms sales and intensify world-wide inflation.

Fifth, despite the diplomatic and economic risks involved, the key decisions behind the new rise in U.S. arms exports were made by President Nixon without consulting or even informing Congress.

THE LOOPHOLES

Underlying these developments is the gradual abandonment of previous U.S. efforts to impose restraint on regional arms races. Even in credit sales, where Congress has a hand in setting policy, restrictions on the volume and quality of weapons sales have been relaxed by amending the Foreign Military Sales Act. The annual credit ceiling is now more than twice as high as it was six years ago; cash sales in Africa and Latin America have been set free of the regional ceilings imposed in the act, and the regional credit ceiling for Latin America has doubled to $150 million a year.

In the Foreign Military Sales Act, enacted in 1968, Congress sought to curb the vigorous merchandising of Henry Kuss, the Pentagon's chief arms salesman in the 1960s, by setting credit limits and a general policy against the sale of sophisticated weapons to developing countries. But the act was riddled with loopholes. Chief among them was the lack of any provision covering cash sales to industrialized countries and nations such as Greece, Turkey, Iran, Korea and the Philippines. There was not even a requirement that Congress be notified in advance of such sales.

Since some of these nations have emerged as major customers, the loophole has turned out to be more important than the act. And the remaining bastions of restraint have slowly crumbled under the pressure of competition from Communist suppliers and from the nation's former cash customers in Western Europe, now significant arms suppliers in their own right. The restrictions on sales to Latin America, for example, were greatly relaxed after France sold sophisticated Mirage aircraft to four Latin governments in 1970–71.

Administration officials argue with seeming perverseness that the nation's basic policy on arms exports has not changed despite the huge jump in sales and radical change in that type of equipment on the market. "What has happened is not new or dramatic," said one official in a recent interview concerning exports to Iran, which, he observed, has long received large quantities of U.S. military aid. This view was echoed by Richard Violette, acting director for sales negotiations of the Defense Security Assistance Agency, and as such the Pentagon's chief arms salesman. Aside from adjustments approved by Congress, he said, "there really was no change in policy on paper." A third official, asserting that restraint is still the rule, declared, "We don't force our arms on anyone."

But in the face of the facts, the administration view seems little more than a semantic quibble. Call it a new approach or a new policy, the effects are the same. The recent sales add a startling and hitherto unsuspected dimension to the Nixon Doctrine, which urged allies to look after their own security.

THE NIXON ORDER

The nature of the change is illustrated by the key sales decision of the past three years. This was former President Nixon's order authorizing the formal offer of a long list of advanced weapons to Iran.

This 1973 order supplanted a decision by the Johnson administration, reported to Congress in 1968, limiting Iran to purchases of $300 million a year in American military equipment. It represented the first time that a large slice of the nation's most advanced conventional military technology was offered for sale to a foreign buyer (with the exception of occasional and limited offers to NATO allies). And, of course, it represented an entirely new stage in U.S.-Iranian relations. The decision was not communicated to Congress.

As a result of that decision, Iran is getting, among other things, the nation's most advanced attack helicopter, thousands of costly "smart" bombs and rockets, and the Navy's newest fighter, the Grumman F–14. Negotiations for Iranian purchase of the newest Air Force fighter, the cost F–15, are under way and officials expect that a sale will be concluded. And the Shah has indicated a desire for other weapons still under development, such as the projected lightweight fighter. Indeed, it is not clear what limits have been imposed on the Shah shopping list.

"What," one senior official was asked, "if the Shah asked for the F–11 or the B–1 bomber," both long-range, offensive weapons.

"That would be a tough one," came the reply. "We would have to look at it very carefully."

Included in the purchase price for the new weapons is extensive training for Iranian users by U.S. military personnel. As a result, U.S. servicemen in Iran, exclusive of dependents, have more than tripled in the past year, to more than 1,100 men, mostly on temporary training duty.

The Shah is paying handsomely for all this. Iranian orders already exceed $5 billion—all cash—and are going higher. The price for 80 F-14s alone approaches $2 billion, or about $25 million a copy, including spares and training. This represents about a 40 per cent premium over the Navy's price.

Officials have indicated that the decision to sell to the Shah was hotly debated within the administration. The Shah already was the dominant power in the Persian Gulf, armed with F-4 Phantoms and other modern military equipment, and it was recognized that he has unresolved territorial claims in the area. (In February and March this year Iranian troops clashed with the armed forces of Iraq in a boundary quarrel.) On the other hand, some administration officials feared a Soviet move to dominate the oil-rich gulf.

The issue, it is said, was decided "at the highest level of government," meaning the President himself.

UNANSWERED QUESTIONS

Some pointed questions remain unanswered. What lay behind the decision to sell first-line technology? To what extent was this decision influenced by the Pentagon's own procurement troubles, exemplified by the 250 per cent jump in F-14 unit costs from 1969 to 1972, or by the political impact of declining employment in the U.S. aerospace industry?

Highly informed sources acknowledge that in the fall of 1971 the Pentagon's budget for fiscal 1972 and fiscal 1973 was increased in order to protect defense industry jobs and stretch out the impact of Vietnam disengagement. According to these sources, a boost in export sales was considered as one way of helping ease the impact on the defense industry of declining Pentagon orders.

How did the Shah learn of his opportunity to buy advanced U.S. weapons? According to formal policy, foreign governments initiate all requests to buy weapons, but the United States had never before offered such a range of weaponry for sale. What emboldened the Shah to ask? There were, as it develops, numerous opportunities in 1972 to intimate conversations between high ranking U.S. officials and the Shah.

Navy Secretary John Chaffee visited Tehran in January; Air Force Secretary Robert Seamans went in April. In May former President Nixon himself was in Tehran with Henry Kissinger. In July, then-roving ambassador John Connally was there. If they discussed arms sales—and it seems likely—who was the wooer and who the wooed?

What changed the administration's view of the Shah's ability to pay? The 1968 decision to limit sales to $600 million a year was based in part on an estimate of the Shah's financial capacity. The 1973 decision to sell a lot of costly new weapons came almost a year before the price of oil was raised.

To what extent were the economic and diplomatic risks of the decision given a serious appraisal? Former Defense Secretary Melvin R. Laird, who supported the decision at the time, has recently expressed equivocal feelings about the wisdom of an unrestrained arms supply policy in the Persian Gulf.

"While providing armaments to Third World countries may often be a positive short-term measure," Laird wrote this year in a foreword to a critical study entitled "Arms in the Persian Gulf" that "it must be accompanied by diplomatic activity so that massive military assistance and/or large weapons sales do not become a standard long-term policy."

The study was written by Dale R. Tahtinen, an associate of the American Enterprise Institute for Public Policy Research, which could be described as a conservative think-tank. Tahtinen, an expert on the arms balance in the Middle East is appalled by the Iranian supply decision.

He writes: "At this time, the military balance of power in the Persian Gulf leans heavily in Iran's favor and the gap appears to be widening. This, however, does not decrease the likelihood of war. In fact, as the last two Arab-Israeli conflicts have demonstrated, the possession of highly sophisticated weapons by potential belligerents in explosive situations enhances the possibility that disagreements will be settled by fighting instead of diplomacy. Furthermore, with the advance in military hardware has come greater superpower involvement in the Gulf, and a concomitant increase in the danger of military confrontation between the United States and the Soviet Union" (which supplies Iran's rival, Iraq).

"This danger would reach a particularly high level if fighting were to erupt between the client states. Thus it seems imperative that the United States should review the pattern of its military policy in the Persian Gulf."

CONGRESS ALERTED

The Iranian decision was conceived and executed in secret. Its dimensions have become clear only in retrospect, and in piecemeal fashion. Congress, which was not consulted on the Iranian sales decision, only recently has begun to face its implications. The House Foreign Affairs Committee now is considering amendments to the Foreign Military Sales Act which could provide at least a modicum of restraint on future cash sale decisions. One, sponsored by Rep. Jonathan Bingham (D-N.Y.) would require the President to submit all sales of $25 million or more to a congressional veto; a similar amendment is being pressed in the Senate by Sen. Gaylord Nelson (D-Wis.). Such an amendment, if adopted, would close the loophole in the act through which cash sales can be made without consulting or notifying Congress.

But neither amendment attacks the root of the problem: a booming arms market, fed by rising raw materials revenues, and avidly courted by every arms manufacturer in the world. Unilateral gestures of restraint must be backed by international agreements among suppliers not to supply and among recipients not to buy.

There has been much repetitive talk about international restraint. The question of conventional arms limitation comes up annually at the Conference of the Committee on Disarmament, a 26-nation disarmament forum in Geneva acting under U.N. auspices. It has been an aspect of U.S.-Soviet discussions on the Middle East at least since 1967. But there has been no action in either case. Two international agreements with conventional arms control provisions—the Korean armistice agreements of 1953 and the Indochina ceasefire agreements of 1973—have been repeatedly breached.

Fresh approaches are required. One possibility is a serious attempt to achieve a NATO-wide agreement limiting competition to sell advanced military equipment. This would do much to alleviate the current rush to conclude advantageous deals with Arab states. But in the long run it will be necessary to include the Soviet Union and other Communist states in an agreement on conventional arms transfers.

"To me," said former Defense Secretary Laird in a recent interview in Forbes magazine, "the most important agreement that can be worked out in the next four or five years is to involve the Soviet Union, the United States and all other arms-producing countries to limit the sale and delivery of conventional military equipment into the Middle East, Southeast Asia, Latin America and Africa."

PRODUCTIVITY: THE LAGGING U.S. PERFORMANCE

Mr. PERCY. Mr. President, productivity growth is essential to the prosperity of both the domestic and international sectors of the U.S. economy. If the productive efficiency of U.S. labor and capital declines, our standard of living and our competitive economic position will suffer commensurately. Productivity increases translate directly into decreases in inflation.

Unfortunately, industrial productivity in the United States has measurably declined for two successive quarters. Partially because of the productivity decline, the real buying power of the dollar has decreased at home. At the same time, the productivity of our major competitors has risen remarkably to the point where, as a recent Washington Post editorial points out, "most Americans still have no idea how fast the rest of the world is drawing even with us in the accumulation of economic power."

Mr. President, I urge that Congress support and encourage productivity growth. First, Congress must assist the National Commission on Productivity to do its work, and I am pleased that the full amount of the Commission's authorization has been included in the Senate-passed appropriation bill. Second, I urge that American labor and management organize productivity councils in factories across the country in order to encourage industrial efficiency.

The benefits of productivity accrue to all, whether to the worker, the businessmen, or the retired senior citizen. I ask unanimous consent that the text of the editorial: "Productivity: The Rest of the World Is Catching Up," of the July 12, 1974, edition of the Washington Post, be printed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

PRODUCTIVITY: THE REST OF THE WORLD IS CATCHING UP

Americans are accustomed to the truth that they are more productive at their jobs than anyone else, and that is why our standard of living is the world's highest. But like a good many other favorite old truths, this one is no longer nearly as true as it used to be. Very soon it will not be true at all, if American productivity gains continue to be lower than the other industrial countries'.

America's position in the world has changed radically in the past several years: we are longer the only extremely productive, extremely rich country. As a result, neither the nation's economy nor the world's is working the way it used to or the way that we expect it to.

Productivity is rising everywhere. But it is rising much more slowly in North America than in Europe or Japan. Economists used to brush these disparities aside by observing that, after all, wages in North America were still vastly higher than anywhere else. But that too is less true today than several years ago. Consider a comparison of average hourly compensation, in manufacturing industry, for eight rich countries:

	1967	*1973*
United States	$4.02	$6.10
Canada	2.89	4.90
Japan	.67	2.46
France	1.69	3.95
Germany	1.68	4.90
Italy	1.48	3.73
Sweden	2.51	5.49
United Kingdom	1.40	2.56

These compensation figures count not only cash wages, but fringes. They include certain taxes on employers—for example, the employer's contribution to Social Security in

the United States—that economists consider actually part of the worker's wage. You also need to know that compensation in each nation's own currency has been converted into dollars at the current exchange rate. In 1973 the typical German worker could buy almost three times as many dollars' worth of American exports as in 1967, partly because of his own rising productivity but also because of the long slide in the dollar's value in Germany. Incidentally, the figures do not mean that the German worker is living three times as well, since many of his basic needs are items that cannot be traded internationally. Housing is one major example, and medical care is another.

INCREASES IN PRODUCTIVITY AND COSTS, 1972-73

[In percent]

	Rise in output per man-hour	Rise in cost of labor	Rise in labor cost per unit of production	
			National currency	U.S. dollars
United States	4.7	7.9	3.1	3.1
Canada	4.1	8.7	4.5	3.5
Japan	18.3	24.5	5.3	17.8
France	7.1	15.5	7.9	22.6
Germany	6.5	13.0	6.1	27.7
Italy	7.4	23.0	14.4	14.9
Sweden	7.4	12.2	4.5	14.2
United Kingdom	8.9	17.9	8.3	6.1

The star performer here, as usual, is Japan, where the dollar value of the worker's compensation has nearly quadrupled over these six years. One of the items that is traded internationally, in dollars, is food. If you have been wondering why we suddenly hear so much about Japan's impact on our food markets, as it buys grain or suddenly stops buying beef, the essence of the answer is in these numbers.

The U.S. Labor Department's Bureau of Labor Statistics published a brief but highly illuminating table recently showing the percentage change in productivity—that is, change in output per man hour—for each of these eight countries from 1972 to 1973. That's the number in the first column on the table. The poor showing of the United States is, unfortunately, typical. Since 1960 productivity increases in this country have been the lowest of any of the major industrial countries, and our rate has been hardly better than half the average for all the other industrial countries together.

The second column in the table shows what happened to wages. When wages rise faster than output, as they did in all the countries, the result is wage inflation. The effect is that, despite rising productivity, the labor cost rose per unit of production, as the third column shows. But there is a fourth important number: what happened to unit labor costs of the goods moving in international markets, where prices depend on currency rate exchanges. That's the last column, where we find the effect of the long decline of the U.S. and Canadian dollars. Although North America had the lowest productivity gains on the list, wage increases here were relatively modest and the rise of other currencies kept our prices low on world markets. The other side of the picture is, unfortunately, that our purchases of foreign goods cost a lot more—representing an erosion of North American living standards relative to, say, Germany's.

Britain, usually the industrial laggard, showed in 1973 the highest productivity gain in Europe. But it lost its advantage and more in a tremendous wave of wage increases which left it, except for hapless Italy, with Europe's worst case of wage inflation. Germany, with lower productivity gains, held the line better on wages and that is why the mark rose rapidly while the pound fell.

A few qualifications concerning these numbers: Nations organize their industry and social benefits very differently. International comparisons are always inexact. The figures here accurately portray general trends and the general scale of differences, but they are not precise to the hairline. They are very broad statistical aggregates that sweep together not only apples and oranges, but some bananas and pineapples as well. Productivity comparisons are particularly controversial. Businessmen, labor unions and politicians all dislike them. For the countries at the bottom of the list, they raise uncomfortable questions about the reasons for poor performance.

Sometimes profound changes come over countries silently, without making any news. Eventually it begins to dawn on people that something basic has changed, but only by slow gradations that nobody noticed at the time. There were no shots fired, no alarms rung, no documents signed. News is made mainly by governments, but there are large areas of nation's lives that their governments don't pay much attention to. The long waves of history often pass without much public notice. Accustomed to great and unique national wealth, most Americans still have no idea how fast the rest of the world is drawing even with us in the accumulation of economic power.

The emergence of other equally rich peoples brings one obvious advantage to us. By offering us broader markets for the goods we make, it raises our own prosperity. But there is also a danger. Used to its wealth, this country has recently not taken much trouble to improve productivity. Now we are encountering increasingly stiff competition from countries that, on their struggle upward, have learned to improve it rapidly and continuously. Perhaps the question for Americans is the one that the Smithsonian Institution put in its exhibition last year on productivity: "If we're so good, why aren't we better?"

JAPANESE DIRECT INVESTMENT IN THE UNITED STATES

Mr. MUSKIE. Mr. President, in March 1973 the Boston Consulting Group was commissioned by the Government of Japan to "study the opportunity for Japanese capital investment in the United States, including the economic and political factors which are likely to affect the viability of such investments over time." The study was commissioned at the instance of Prime Minister Tanaka, and the project was directed by Mr. William Givens of the Boston Consulting Group, a former State Department expert on Japan. The report, entitled "The Prospect for Japanese Direct Investment in the United States, 1974–80," was submitted to the Japanese Government in January 1974. It has just recently been published for the interest of the general public.

In a period of capital shortage, increased foreign direct investment in the United States under appropriate conditions can create significant opportunities for new jobs and further growth in our own economy. The Boston Consulting Group's study is the most thorough and up-to-date evaluation of the prospects for Japanese investment and some of the problems associated with it, and I ask unanimous consent therefore that the summary findings of this report be printed in the RECORD.

There being no objection, the summary of findings was ordered to be printed in the RECORD, as follows:

SUMMARY OF FINDINGS

HIGHLIGHTS

Japanese direct investment in the U.S. is projected to rise to some $6–7 billion, asset value, by 1980, exclusive of private securities purchases and banking assets (estimated at $1.5–2 billion and $12–16 billion, respectively).

Investment levels will be limited by market economics, competitive dynamics, and the availability of alternative opportunities in other countries, rather than by the availability of capital. The possibility of "runaway" Japanese investment in the U.S. appears remote.

The climate for Japanese investment in the U.S. is currently stable and benign, based in large measure on the successful integration of existing Japanese investment activities into the U.S. economy. Assuming competent planning and management of future investment activities, the levels of investments projected to 1980 are not likely to cause serious political problems. Planning will become increasingly complex as investment levels rise, however.

The principal areas of potential friction are

Investments in Japanese tourism based real estate activities, particularly in Hawaii, the U.S. West Coast, and possibly Alaska; and

Local overconcentrations of Japanese activity, owing to the tendency of Japanese businesses to "cluster" near one another.

Both of these problems can be held within manageable bounds through skillful planning.

The major trading companies will be the dominant force in shaping the investment pattern.

OBJECTIVES AND CONDUCT OF THE WORK

In March 1973, The Boston Consulting Group was commissioned by the Government of Japan to "study the opportunity for Japanese capital investment in the United States, including the economic and political factors which are likely to affect the viability of such investments over time." This report has been prepared in fulfillment of that assignment.

In light of the magnitude and complexity of the issues involved, the interests and perspective of the client, and the time and resources allotted to the project, the following objectives were adopted for the work:

To provide the Government of Japan with an overview of the probable pattern of Japanese investment in the U.S. over the next five to seven years, including the order of magnitude and composition of such investments and their probable impact in the U.S.;

To identify the economic and political issues which these investments are likely to create which may require policy action by the Japanese Government; and

To provide an analytical framework for planning and policy formulation with respect to Japanese capital investment in the U.S.

The evaluation involved two principal tasks:

Identification of the probable pattern of Japanese investment in the U.S. in 1980; and

Evaluation of the likely U.S. reaction to this pattern.

The first of these tasks was accomplished through statistical research and analysis and extensive interviews with Japanese business executives and government officials in both Japan and the U.S. The second was accomplished through a series of direct interviews and telephone and mail surveys in the 50 U.S. states and Puerto Rico. The conduct of the work is described in detail in the section, "Conduct of the Study: Approach and Methodology".

PRINCIPAL FINDINGS AND OBSERVATIONS

The character of Japanese foreign investment

Japanese direct foreign investment will be almost entirely private in nature and will not be centrally planned or controlled. It will be comprised of hundreds of independent investment decisions and actions, ranging from very small (family vacation homesites) to very large (industrial parks, steel mills, hotels).

It will not, contrary to a common U.S. view, be primarily the result of a capital surplus; the picture of dollar-rich Japanese industry avidly "shopping" for profitable outlets for excess cash is highly oversimplified and misleading. In practice, Japanese overseas investment will be a response to specific economic and political forces, creating outward pressures on Japanese industrial and business activity across a wide range of interprises.

The volume, rate of growth, and composition of Japanese capital investment in the U.S. will be determined by the interaction of several variable factors:

The action of the economic and political forces noted above;

The reactions of individual Japanese firms and private investors to those pressures;

The availability of comparable or superior alternative investment opportunities in other countries; and

Japan's international balance of payments position and competing demands on available capital.

The pressures and motives for Japanese investment in the United States

In the broadest sense, Japan's economic capabilities have expanded over the past two decades from those of a second-rank exporter of labor intensive manufactured products to those of a major industrial power. During this period, and, indeed, historically, Japan's external economic activity has been centered almost exclusively on its export-import trade. The central objective of Japanese economic policy has been to industrialize on the pattern of the U.S. and Western Europe, systematically reallocating human and capital resources forward as rapidly as possible into increasingly higher levels of technology, capital intensity and productivity. Effort has been concentrated largely in industries in which Japan could most readily develop and maintain international comparative advantage. The essential pattern has been one of concentrating production almost entirely in the domestic economy, producing not only for rapidly rising domestic demand, but also for export, in order to generate the foreign exchange necessary to satisfy Japan's critical import needs, most notably, food, raw materials, energy, and technology. Virtually without natural resources, Japan has functioned essentially as an increasingly sophisticated and efficient factory, trading finished goods abroad for the resources and technology needed to continue the program of economic development and industrialization in Japan itself.

Japan now appears to be entering a new period of its economic development in which the Japanese homeland will be less exclusively a production center and will begin to function as the headquarters of a global economic system. Foreign investment will be the principal vehicle for this transition, and will flow in a general pattern dictated by Japan's changing needs, specifically:

The need to shift a part of production offshore in response to mounting domestic shortages, a growing trade surplus, and protectionist pressures in principal overseas markets;

The need to maintain a secure base for the long-term sourcing of critical resources in the face of prospective worldwide shortages;

The need to establish an independent position in the development of advanced technologies; and

The need to expand and diversify Japanese external economic activity beyond the existing pattern of export-import trade.

Prospective Japanese investments in the U.S. can be classified into four broad categories, based on the needs, or motivations, listed above:

Category 1: Export Substitution Manufacturing Investments

Category 2: Resource Acquisition Investments.

Category 3: Technology Acquisition Investments.

Category 4: Diversified Investments.

It is important to note that the principal criterion for this categorization is not the type of activity concerned (e.g., manufacturing, mining, agriculture), but rather the underlying objective for which the investment is made. This classification system facilitates both the projection of likely investment patterns and the evaluation of probable U.S. reaction to them. It should also be noted that these categories will exhibit markedly different characteristics, both economic and political. Since they are based on fundamentally different aspects of Japanese economic activity (i.e., exports, imports, technology, and diversification), their value to Japan (in terms of their contributions to the Japanese economy and to Japanese economic policy objectives) will differ widely, as will their impact and acceptance within the U.S. The four categories and their principal characteristics are as follows.

Category 1: Export Substitution Manufacturing. This category includes only investments in establishing or acquiring manufacturing facilities in the U.S. to produce or assemble for the U.S. market items currently being exported from Japan. The objective of these investments is to shift production from Japan into the export marketplace in order to achieve lower factor costs, circumvent domestic shortages in Japan, or relieve protectionist pressures. Examples of Category 1 investments are the Y.K.K. slide fastener factory in Macon, Georgia; the Sony and Matsushita television assembly plants in San Diego, California and Puerto Rico, respectively; the Ataka-Kyoei steel mill in Auburn, New York; and the Kikkoman soy sauce factory in Wisconsin.

From the Japanese point of view, these investments will tend to relieve domestic pressures created by labor, energy, and land shortages, and by the mounting pollution crisis. They will also tend to reduce Japan's tendency toward trade surplus (and the resultant political pressures) by shifting production offshore into Japan's principal overseas market. From the U.S. viewpoint, these investments will create new jobs and public revenues, increase productivity through the introduction of new technology, and replace unpopular levels of imports with domestic production. In the broadest sense, the value to Japan of Category 1 investments will be high, and the risk of adverse reaction in the U.S. will be low.

Category 2: Resource Acquisition for Export to Japan. This category encompasses all investments made for the purpose of acquiring raw materials and energy specifically for export to Japan. "Resources" means all natural resources, including agricultural, forest, mineral, marine and energy. By type of activity, Category 2 includes exploration for, and development, extraction, and processing of, mineral resources; production, harvesting, or processing of agricultural, marine, or forest products; cattle or poultry raising, meat processing and meat packing; and any manufacturing activity in which the U.S. site is selected solely or principally as a source of energy. The most prominent examples of existing resource acquisition investments are the extensive Japanese holdings in timber and canneries in Alaska. However additional investments may be anticipated in any of the resources listed, particularly in specialty agricultural products (citrus fruits, nuts, grapes, and wine), or in the processing of raw materials purchased from U.S. producers.

Investments in the development and processing of U.S. natural resources for export to Japan will provide improved access to critical raw materials. To the extent that U.S. processing is involved, they will increase the value added to these products in the United States, relieving a chronic source of friction. Finally, insofar as these investments result in increased U.S. exports to Japan, they will tend to reduce the U.S. trade deficit with Japan. All of these results will tend to be beneficial to Japan. From the U.S. point of view, however, Japanese investments in this category will not be seen as an unadulterated blessing. In some cases they will intensify competition for scarce resources, elevate prices and exacerbate shortages. These investments will tend to be more capital intensive than Category 1 activities, and will have a less tangible effect on the creation of new jobs. They will be highly controversial from the environmental point of view. Generally speaking, the value of Category 2 investments to Japan will be high, but the political risk in the United States will also be substantial.

Category 3: Technology Acquisition. Category 3 includes all investments made for the purpose of acquiring technology or facilities for its development. Such investments will include equity participation in, or acquisition of, smaller U.S. firms with promising technologies under development (e.g., pollution control devices, biomedical technologies, computer peripherals), and joint development projects, joint ventures, or consortia with technologically advanced American corporations to develop major technological resources for application in both economies (surface transportation systems, uranium enrichment, oceanography). Thus far few investments in this category have come to public attention. However, our investigation indicated that Japanese interest in investments of this type is rising, and a number of negotiations are underway.

The potential benefits to Japan of an established presence in the U.S. technological sector are both substantial and evident. Investments in this category will tend to be unobtrusive, with limited public impact. To the extent that they are visible, it seems likely they will be seen as an improvement over licensing, a technique often viewed as a development has been taken. The value to Japan of investments in this category is high; the risk in the United States will be low.

Category 4: Diversified Investments. Superficially, this appears to be an arbitrary "catch all" category, since it covers all investments not included in Categories 1-3, and since it encompasses a variety of activities. However, with investments related to exports, imports, and the acquisition of technology covered elsewhere, Category 4 consists, for practical purposes, of the expansion and diversification of Japanese economic activity into new fields and markets. Specifically, it will include the following kinds of investments.

Real estate;

Banking and finance;

Retailing and commercial activities;

Transportation, warehousing, and distribution; and

Acquisition of "new" business; i.e., unrelated to existing Japanese import-export trade with the United States.

Despite the disparate nature of the various activities in Category 4, investments in this category have several significant features in common. Since, by definition, they represent expansion by Japanese business interests into new areas of activity, they are areas in which the investors will be less experienced in the U.S. environment, where business risks will be somewhat greater, and where American resistance is likely to be higher than in sectors where a Japanese presence is already established. With the exception of individual investments in U.S. securities, Category 4 activities will tend to be highly visible and often controversial, particularly in real estate and tourist-oriented investments. At the same time, Category 4 investments will, in general, tend to make little immediate contribution to the Japanese domestic economy, and will have limited effect on the U.S.-Japan trade balance. Accordingly, their value to Japan will be limited and the political risk in the U.S., relatively high.

The value and risk characteristics of the four categories are summarized in the table on the following page.

	Category 1, export substitution manufacturing	Category 2, resource acquisition	Category 3, technology acquisition	Category 4, diversified investments
Value to Japan [1]	High	High	High	Limited.
Risk in United States [2]	Low	High	Low	High.

[1] Potential contribution to Japanese policy objectives.
[2] Probability of adverse reaction in the United States.

Characteristics and implications of the total investment pattern

The pattern of Japanese investment in the U.S. at any given time can be represented by a simple bar graph:

(Graph not printed in the RECORD.)

Obviously, a wide variety of patterns is possible, each with different value and risk characteristics. It is apparent that both the viability of the overall investment pattern and its value in terms of Japan's economic interests will be determined not only by the total volume of investment, but also by the allocation of the whole into the four categories. It becomes a matter of some importance to determine what the likely profile of Japanese investment will be.

A number of other points should be noted with respect to the pattern of Japanese investment and its risk-value characteristics:

The potential for Japanese investment in the U.S. is not infinite; practical limits can be imposed in four ways:

By the availability of capital for this purpose;

By the accomplishment of underlying investment objectives;

By the capacity of the U.S. environment to absorb large volumes of Japanese investment; and

By the number of investment opportunities in the U.S. which are potentially attractive to Japanese investors.

As the level of investment in a given category rises, the underlying need will be satisfied and the incremental value of additional investment will be reduced. (Japan will not, for example, wish to shift all of its export production from Japan into its overseas markets; the Japanese demand for foreign-sourced raw materials, while large, also has finite limits.) At the same time, the political risk will tend to increase with rising investment levels. At some point the incremental risk may well outweigh the incremental value of further investment in the category, and a natural ceiling will be reached. This ceiling will not necessarily be apparent, particularly to the individual investor.

Adverse reaction to Japanese investment in one category will raise risk levels for other categories, as well. Excessive concentration of investments in high-risk categories will raise risk levels throughout the entire pattern.

Accordingly, no single Japanese investment, or category of investments, can be considered in isolation. Each will affect both the potential value and the viability of others. Individual investments can be evaluated effectively only in the context of the pattern as a whole. A random pattern of investments will almost certainly be inefficient, and will possibly become a political liability.

As the pattern grows in size, visibility, and impact, its profile will become increasingly important and difficult to influence.

Viability and success: The climate for Japanese investment in the United States

In our program of interviews, we found actual American attitudes toward Japan to be considerably more moderate and pragmatic than they are generally thought to be. Outright expressions of antipathy or opposition to Japanese investment were extremely rare; on the contrary, the prevalent attitude was one of positive receptivity, reflecting both a realistic awareness of the potential benefits of such investments and a consequent willingness to meet prospective investors more than halfway in resolving adjustment problems and minimizing frictions.

A second encouraging finding was that existing Japanese investment in the U.S., of which there is already a large volume and variety, has displayed very little of the abrasiveness and volatility which might have been expected. With the single exception of Hawaii, where Japanese investments in hotels have been subject to controversy and friction, we found no significant instance of maladjustment or adverse reaction. Numerically, of course, most existing Japanese investments are sales offices and other small, service-oriented activities. However, they also include a long and rapidly growing list of manufacturing and resource development operations, including textile and steel mills, consumer electronics plants, a truck assembly plant, food processing operations, fisheries, mineral extraction, timber, machinery, and others in virtually every part of the United States. The general pattern to date has been one of smooth integration and acknowledged beneficial impact.

We believe the climate for Japanese investment in the United States has reached a point where such investments will be received less emotionally than pragmatically, on the basis of their perceived value to the communities in which they locate. There does remain evident throughout the country a subtle but unmistakable undercurrent of anti-Japanese sentiment, a predisposition to see Japanese business as monolithic, overly aggressive, and insensitive to Western values and practices. This, in turn, will tend to catalyze and aggravate routine competitive frictions, labor problems, and other grievances, making Japanese investments somewhat more vulnerable to adverse reaction that comparable U.S. owned enterprises. However, the strength and importance of this phenomenon should not be exaggerated.

But the climate is not static; it is a constantly evolving mixture of positive and negative factors. Currently, it is benign and stable because:

The political relationship between Japan and the United States has been relatively trouble free;

Adverse reaction in the U.S. to foreign investment in general has thus far been limited; and

The level of investment is still quite low, and the balance between Japanese investments creating positive impact in the U.S. and those having negative impact has been extremely favorable.

This situation, obviously, could be adversely affected by negative developments in any of the three:

Serious political differences between Japan and the U.S. in which Japanese economic success might come to be seen in the popular U.S. view as contrary to the U.S. interest;

A deterioration of the U.S. economic position and decline in the dollar relative to the yen, deutschemark, and other currencies, leading to a substantial foriegn economic presence in the U.S. The concept of affluent, aggressive foreign interests "buying the United States" could inspire jealousy, resentment, and ill-will against foriegn investment generally, including (but not directed specifically toward) investments from Japan; and

A qualitative shift in the balance of Japanese investments in the U.S. from favorable to unfavorable as new investments are made and the total volume of Japanese investment in the U.S. grows to major proportions.

Evaluating specific investments

The U.S. political and economic environment will absorb a very substantial volume of Japanese capital investment, provided only that the individual investments comprising the whole are competently selected, planned, and managed. However, many, perhaps most, of the Japanese investments in the United States to date appear to have been based on instinct, chance, and ad hoc advice, rather than systematic evaluation. Some investments (particularly in real estate) have been made virtually without regard to their political consequences, with predictably adverse results. In other instances, a preoccupation with the avoidance of any friction whatever has led to excessive caution and opportunity loss. As a general pattern, we find that prospective Japanese investors, both large and small, are acting (or failing to act) on the basis of hearsay and simplistic generalities when hard analysis is both possible and esential. To the extent that this pattern continues as the volume and concentration of Japanese investment in the U.S. increases, the probability of serious political difficulty also rises.

No Japanese investment will be entirely without friction. To some extent, conflicts of economic interest, misunderstandings, and resentments will occur in virtually every Japanese investment made in the U.S. Accordingly, long-range acceptance and viability in each case will depend not on the absence of friction, but rather on achieving and maintaining a favorable balance between positive and negative factors. The focus of planning and evaluation must be on this balance.

Positive factors will for the most part consist of tangible economic contributions: employment, taxes, community economic benefits, increased exports, decreased imports, and the like. The political value of these factors will depend entirely on the extent to which the affected U.S. interests are aware of them and perceive them as beneficial.

The principal negative factors and sources of friction will also be economic, and will be those competitive activities which conflict with domestic interests:

Competition for market and market share;

Competition for raw materials and scarce natural resources, including land and energy;

Competition for labor in locations or industries where it is scarce;
and other activities which tend to raise prices or factor costs in the affected communities. These competitive frictions, as noted above, are subject to aggravation by differences in cultural patterns, managerial styles, and competitive practices, including:

Relations with organized labor;

Inter-company relationships, both cooperative and competitive;

Debt policies and pricing strategies; and

Social customs and difficulties in communication.

Attention must be given not simply to the type of investment activity in question, but also to the character of the specific investment and its porbable impact on the several communities of interest it will affect. The critical elements are:

The economic and political impact of the activity on the community where it is located;

Its impact on the industry concerned; and

Its economic impact at the national level.

It is our contention that virtually all of the serious controversies which are likely to arise with respect to Japanese investment in the U.S. can be anticipated, and that most can be avoided, by the systematic evaluation of the foregoing elements in advance of the final decision to invest. A recommended procedure for such evaluation is described in detail in the section, "Success and Viability: The Climate for Japanese Investment in the United States", page 85.

The projected pattern of Japanese investment and its likely impact in the United States

We anticipate that Japanese investment assets in the U.S. will rise by 1980 to a total of $6–$7 billion, excluding banking assets ($12–15 billion) and portfolio investments ($1.5–2.0 billion). We estimate that at least half of the total asset figure will represent debt undertaken in the U.S., the remainder being capital from Japan.

The projected breakdown by category is as follows: *

[In billions]

Category 1 (export substitution manufacturing)	$2.7
Category 2 (resource acquisition)	1.6
Category 3 (technology acquisition)	0.9
Category 4 (diversified investments)	1.6
Total assets	6.8

Thus, displayed graphically, the profile of Japanese investment in the U.S. would appear as shown on the following page:

The purpose of the foregoing projection has not been to predict the precise level or composition of Japanese investments in the U.S. in 1980, but rather to assign some quantitive, order-of-magnitude values to the probable pattern of such investments in order to judge their likely impact in the U.S. Assuming the projected levels of investment are properly dispersed geographically (a questionable assumption discussed further below), the impact in the U.S. should be generally favorable. The effect, in addition to the initial capital input of some $3–4 billion into the U.S. economy, will be the creation of several billion in assets, thousands of American jobs, millions of dollars in public revenues, and an annual positive contribution of several billions of dollars to the chronically deficit U.S. balance of payments.

The projected 1980 level of export substitution manufacturing investments in some $2.7 billion, asset value. At typical U.S. sales-to-asset ratios, these assets would represent annual value added of approximately $3 billion, or 15 percent of projected Japanese exports to the U.S. for 1980 (assuming a 10 percent annual export growth rate through the decade). Provided the individual investments comprising this total are completely planned and managed, this level of investment should be readily absorbed into the U.S. economy. In most quarters in the U.S. it will be justifiably seen as an asset creating employment and revenues and stimulating competition. The most likely source of resistance will be competing American firms in the affected industries: e.g., steel, automobiles, consumer electronics, textiles. However, we do not expect this opposition to reach critical proportions or to attract substantial popular support, provided only that the public is made aware of the benefits to the U.S. economy which this type of investment represents. Serious problems with U.S. labor also appear unlikely provided Japanese management continues to adhere to established U.S. practice in its relations with labor.

Barring large-scale Japanese investments in U.S. shale oil production or uranium enrichment—developments whose prospects are yet unclear—the potential for Japanese investment in resource development in the U.S. appears distinctly limited, particularly by comparison with opportunities available elsewhere. Unlike the situation in many less developed economies (where there is little or no competing domestic demand for the resources), ownership of U.S. resources would not, in most instances, be effective as a means of assuring exportability and would typically involve substantial political and economic risks. Further, most of the raw materials which Japan imports in quantity from the U.S. promise to be sufficiently available that long-term purchase agreements will provide adequate stable supplies. Accordingly, the greater part of Category 2 Japanese investments in the U.S. seems likely to be in the processing of U.S.-sourced raw materials for export to Japan—the milling of food grains, canning of fish and other marine products, processing of fruits and vegetables, crushing of soybeans, milling and pulping of wood, and the like. These investments are likely to be motivated largely by the desire to transfer these activities offshore for energy, pollution, land availability, and, over the longer term, balance of payments reasons rather than as a means of acquiring control of the resources themselves. This level of investment, per se, should not cause undue political problems in the U.S., and could, in conjunction with a well planned program of purchase agreements, prove an economic and political asset. The viability of these investments will depend essentially on (1) the quality of planning and management which goes into them, and (2) the impact of Japanese investments in the other three categories.

Although the prospect for technology acquisition investments is still unclear, their political impact will probably be limited. In most instances they will be small and unobtrusive; if large, they will almost certainly be joint ventures or consortia undertaken in cooperation with American firms. Local characteristics will be similar to export substitution investments, hence generally favorable. Further, to the extent that investments of this kind are seen at the U.S. industry level as alternatives to the previous pattern of licensing and purchase, they are apt to be viewed as improvements.

In Category 4, the most important single activity will be the purchase and development of U.S. real estate. This investment will center around resort hotels and related operations based on the rapidly rising Japanese tourist market in the U.S., but will also encompass a variety of other forms: industrial parks and developments, commercial buildings and shopping centers, residential developments, and recreational facilities (golf courses, tennis clubs, ski resorts). Commerically oriented investments (retail and wholesale) are likely to be next in terms of volume and visibility, but will be fragmented into smaller investment units, will be dispersed across a range of activities (department stores, restaurants, travel services, etc.) and will not have a major economic impact. Their principal effect will be to make more Americans aware of the Japanese presence and perhaps to call attention to Japanese investments in other categories.

Most of the predictable controversy and political friction are likely to be associated with diversified investments, notably those in real estate. The most sensitive single area of investment will be in Japanese tourism oriented hotels, resorts, and recreational facilities, where frictions already exist and growth and concentration are continuing. Other real estate developments could generate political problems, particularly with environmentalist groups and civic organizations, if they are not carefully planned and coordinated with local authorities. These activities promise to be a chronic source of annoyance for the indefinite future.

The potential for local conflict is always present in all types and categories of investments. The actual levels of such conflicts and, more broadly, the climate for Japanese investment in the U.S. as a whole will be determined by the quality of planning and management which goes into these activities. Thus far these have been competent and thorough, and we see no reason to anticipate a departure from this general pattern. Some individual lapses, leading to local problems, are inevitable, however.

There are some major variables in the future prospect for Japanese banking in the U.S., notably in possible legislative limitations on the scope of these activities and as to the source of funds for them. However, we expect neither spectacular growth nor drastic curtailment of these activities, and have assumed as a working estimate a 10 percent annual growth for the remainder of this decade. This would mean 1980 assets of $12–$16 billion, with accumulated equity of $300–$500 million. The impact of this level of investment and activity will be moderate in the context of both the U.S. banking industry and the political environment.

Impact of oil shortage

We anticipate both export substitution manufacturing and raw materials processing investments are likely to be accelerated by a petroleum shortfall, particularly over the shorter term.

The longer term prospect is more complex, made so by uncertainties in both the price and availability of oil over the remainder of the decade, by the price trends of other commodities, and by a host of other factors outside the scope of this survey. On balance, however, we do not anticipate a major restraining effect on Japan's overseas investment. We have assumed for the purposes of this analysis that (1) there will be no long-term shortfall of oil sufficient to cause a serious slowing of Japan's economic growth (we still anticipate real GNP growth of 8–10 percent over the decade), and (2) petroleum price increases will not be sufficient to put Japan's balance of payments into critical red, constraining the manufacturing and materials processing investment flows discussed above. To the extent that short-term overseas investment constraints are called for, other activities (e.g., tourism, portfolio investment, real estate) are far more likely targets for limitation.

Strategy issues

At the policy level it is useful to consider the pattern of Japanese investment projected above in terms of its strategic implications: What are its overall value-risk character-

*A further breakdown, by industry and type of investment, is shown in Exhibit 34, page 218. The rationale for these projections is developed in the sections of the report dealing with the four categories.

istics? What problems can be foreseen, and how might they be avoided? How might the pattern be strengthened to reduce political risk or enhance its contribution to Japan's economic interests? Our own observations follow:

General characteristics

The pattern is more modest in scale than we had anticipated, and shows surprising balance. No category of investment appears to be seriously out of proportion to the whole.

In general, the value of the pattern to Japan, in terms of its probable contribution to Japanese policy objectives, will be substantial, and the political risk relatively low. No dramatic political issues are apparent.

The capital requirements for the probable levels of investment are well within the capability of the Japanese economy to supply. However, investment levels in all categories will be essentially self-limiting; that is, market economics, financial risk levels, competitive dynamics, and alternative investment opportunities in other countries will put effective ceilings on likely investments in the U.S. The chance of "runaway" investments in one or more of the categories seems remote.

Category-specific issues

No policy action seems indicated with respect to export substitution investments. Investment rates and levels in this category will be determined largely by the economics, growth, and competitive pressures of the marketplace. There appears little the Japanese Government could do to accelerate this flow, and no reason to wish to inhibit it.

In resource acquisition investments, the near-term prospect is for moderate levels of investment, largely in processing activities. Political risk in the U.S. appears low, and the investments seem likely to contribute significantly to Japanese economic policy objectives. However, a thorough, systematic examination of longer term prospects in this category might well indicate major opportunities for investment in the joint development of U.S. mineral, marine, and other natural resources to the mutual benefit of both Japan and the U.S.

Similarly, technology acquisitions seem unlikely to exceed moderate levels or to have seriously adverse impact in the U.S. The level and pattern of investment in smaller scale (fragmented or componant) technology development projects for commercial application will be shaped essentially by competition and market forces in the private sector, no policy issue arises. However, there may well be a role for government stimulation of, or participation in, larger scale (unit or system technology) projects. The potential for broad-scale, long-term cooperation between Japan and the U.S. in the development of technology merits far more careful and specific consideration than it has been possible to accord it in this general survey.

Diversified investments will benefit the Japanese economy substantially less than those in the three preceding categories; political risk will be high, especially in real estate activities, and some degree of chronic difficulty is virtually inevitable. The potential for serious political problems (that is, of sufficient magnitude to become issues at the government-to-government level) in this category is relatively low, but does exist. Control of these activities can be exercised in three ways: (1) through self control, planning, and discretion by the investors themselves; (2) through controls administered by the Japanese Government; and (3) by means of restrictions and prohibitions imposed by U.S. authorities. Of these, the first is clearly the preferable alternative. Any restrictive actions by the U.S. side (presumably after frictions had grown to unacceptable proportions) would affect the climate in the U.S. for other types of Japanese investments, as well. Accordingly, from the standpoint of overall pattern strength and viability, an important immediate objective should be to apprise the Japanese private sector of the character of this issue, and to seek the cooperation of prospective investors in the careful and systematic planning and management of these politically sensitive activities.

General issues

Although the projected levels of Japanese investment, per se, are moderate in terms of the U.S. economy overall, excessive concentration in a few locations could have greater adverse impact than a much larger investment pattern, skillfully dispersed. Thus, dispersion is a critical variable. Geographic proximity and established trade and social patterns will tend to cause the most rapid and heavy buildups in the western U.S.—Hawaii, Alaska, California, Washington, and Oregon. Other concentrations are likely to form around the existing Japanese investments in other states: Texas, South Carolina, and Georgia. There is no valid reason for excessive concentration; there is a wide selection of suitable locations for most kinds of investments, both among and within the states. The development of this pattern of geographic distribution should be monitored closely by both the Japanese Government and the private sector, and private investors should place major emphasis on this aspect of their pre-investment planning.

All of the foregoing would indicate the desirability of a close and continuous monitoring by the Japanese Government of the overall pattern of Japanese investment in the U.S. as it develops. This will allow early recognition of potential problems, facilitate coordination with the Japanese private sector (and in some instances with U.S. authorities) to minimize them, and provide an adequate information base on which to make policy decisions with respect to these issues. It will also facilitate essential public information activities designed to apprise American interests of the magnitude, nature, and effect of Japanese capital investment in the U.S.

The central force in the development of the Japanese investment pattern in the U.S. will be the major trading companies. They will be active in all four investment categories, and will literally dominate Categories 2 (resource acquisition) and 4 (diversified investments). Their performance will in large measure determine the magnitude, character, and viability of the overall Japanese pattern. Yet it is our observation that few of these firms have yet developed systematic plans, or strategies, for the allocation of their U.S. investment resources. In some of these cases, extremely large corporate resources will be involved, and exposure to political risk could be considerable. The trading company itself will frequently have its own pattern of U.S. investments (within the larger Japanese pattern) with its own set of risk and value characteristics. The criteria for measuring value will, of course, vary from company to company, but the political risk and the need for sophisticated planning and management will be universal. The need will grow as the pattern of Japanese investment in the U.S. grows in scale, complexity, and public impact. Thus, a final key issue is the skill with which these companies deal with the strategy question.

TRIBUTE TO ERNEST GRUENING

Mr. McGOVERN. Mr. President, our late colleague, former Senator Ernest Gruening of Alaska, was revered by millions of his determination to achieve peace among nations and among people.

But there was a facet of Ernest Gruening that was not so widely known among Americans, and that was his lifelong devotion to the resources of this great land and to their wise use for the public good.

Indeed, among his "Many Battles" were spirited fights for the public interest against the special interests in the matter of natural resource development.

In a moving tribute to the late Senator Gruening, Alex Radin, general manager of the American Public Power Association, has written of his farsighted views of our society's energy problems. I ask unanimous consent that Mr. Radin's column, "Outlook and Insights," from the July issue of Public Power magazine, be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

OUTLOOK AND INSIGHTS: A GIANT HUMAN BEING

(By Alex Radin)

The Nation lost a noble, tough-minded, intelligent, and dedicated public servant on June 26, when former Sen. Ernest Gruening of Alaska died of cancer in a Washington hospital at the age of 87.

Sen. Gruening was noted for his outspoken stand in behalf of a number of causes (his autobiography is entitled, "Many Battles"), but his advocacy of public power was the issue which brought me together with him. Sen. Gruening's interest in the power issue dated back at least as far as 1931, when his book, "The Public Pays," was first published. The book described propaganda activities of the private power companies, as revealed in an investigation by the Federal Trade Commission.

Between the publication of "The Public Pays" and the time when I came to know him in the late Fifties, Sen. Gruening had many careers, including that of a newspaper and magazine editor, director of a new Division of Territories and Island Possessions in the Department of the Interior, Governor of Alaska, and finally, United States Senator.

I became acquainted with Sen. Gruening in 1959, when I served as a consultant to him, Sen. Frank E. Moss of Utah, and Sen. Edmund S. Muskie of Maine during a month-long inspection of hydroelectric power facilities in the Soviet Union. The trip, which was undertaken on behalf of the Senate Public Works and Interior and Insular Affairs Committees, also included a visit to France for discussions with officials of Electricite de France about the La Rance tidal project (which was of special interest to Sen. Muskie) and a tour of potential hydro sites in Alaska, notably the Rampart Canyon project.

Sen. Gruening's interest in this trip stemmed from his fervent advocacy of the building of Rampart Canyon Dam on the Yukon River. Always attracted to ideas and concepts of heroic proportions, he found the Rampart Canyon scheme one that measured up to his dreams of developing the economy of Alaska. Rampart Canyon would be one of the most gigantic hydroelectric power projects ever built. It would have an ultimate installed capacity of 6.7-million kw and would create a lake 10% larger than Lake Erie. Sen. Gruening saw the project as a way of providing gainful employment during the construction of the dam, and developing local industry, such as cement manufacturing. Upon its completion, Rampart Canyon would furnish power for the homes and industries of Alaska. Power from the project also could be transmitted by extra high voltage lines to the Pacific Northwest.

Shortly before the trip began, Sen. Gruening injured his ankle, and he had to use a cane throughout the trip. Despite this handicap, and the fact that he was then 72 years old, Sen. Gruening was probably the most active member of our party, which also